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Will the Euro Bring Economic Crisis to Europe?

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The initial introduction of the euro has, against many expectations, been accompanied by a decline in the value of the euro (notably vis-à-vis the dollar and sterling). It has also been introduced at a time of high levels of unemployment within most of the European Union (EU). This paper explores how the economies of the EU may suffer from the introduction of the euro, specifically from the policy and institutional arrangements within which the euro is embedded.

It is the argument of this paper that the eurozone will face considerable economic difficulties. These difficulties will take a number of forms, but we focus on two rather different aspects which could qualify for the term crisis. First, the euro has been launched with high levels of unemployment (of the order of 10 percent of the work force) and with particularly severe disparities in unemployment experience and in standards of living. At the end of 1998, the rate of unemployment was over 20 percent in Spain, and in double figures in Finland, France, Germany, Ireland and Italy. It is argued here that these high levels of unemployment are likely to continue in the foreseeable future, and that the policy arrangements which surround the operation of the euro, notably the objectives of the European Central Bank (ECB) and the workings of the Stability and Growth Pact, will have a deflationary bias. These levels of and disparities in unemployment could be termed a crisis. Second, the introduction of the euro and the associated institutional setting could well serve to exacerbate tendencies towards financial crisis including the volatility and subsequent collapse of asset prices and runs on the banking system. There may be some additional forces of instability arising from the relationship between the dollar and the euro as two major global currencies and the current trade imbalances. Further, the operating arrangements of the European System of Central Banks (ESCB) can be seen as inadequate to cope with such financial crises.

THE INSTITUTIONAL POLICY FRAMEWORK

The institutional policy framework within which the euro has been introduced and will operate has four key elements. First, the ECB is the only effective federal economic institution. The ECB has the one policy instrument of interest ('repo') rate to pursue the main objective of low inflation.(1) The Governing Council of the ECB(2) agreed on the main features of their stability-oriented policy strategy (ECB 1998). The single monetary policy will have a euro area-wide perspective. The president of the ECB at a press conference on 13 October 1998, clearly stated that monetary policy "will not react to specific regional or national developments". A quantitative definition of price stability was adopted: the annual increase in the Harmonised Index of Consumer Prices (HICP) for the euro area should be less than 2 percent. This is to be achieved through the policy weapon of the rate of interest, and by announced quantitative reference values for the growth of the broad M3 monetary aggregate set at 4.5 percent. Being a reference level, there is no mechanistic commitment to correct deviations in the short term, although it is stated that deviations from the reference value would, under normal circumstances, `signal risks to price stability'. It has also been agreed that a broadly-based assessment of future price developments will be undertaken, but not publicly announced.

Second, the ECB and the national central banks are linked into the ESCB with a division of responsibility between them. The ECB has the responsibility for setting interest rates in pursuit of the inflation objective and the national central banks responsibility for regulatory matters. In order to achieve its objectives, the ECB will conduct open market operations, it will offer standing facilities (overnight lending against eligible assets and deposit facilities to the institutions subject to minimum reserves with national central banks), and it will impose minimum reserve requirements. The latter will be interest-rate bearing (at the repo rate) on institutions holding accounts with it. The reserve ratio will be 2 percent of eligible liabilities,(3) and the reserves will be lodged with national central banks.

One notable feature of the operation of the ESCB is the apparent absence of the lender of last resort facility. The Protocols under which the ECB is established enables, but does not require, the ECB to act as a lender of last resort. The relevant article of the Protocol suggests that 'In order to achieve the objectives of the ESCB and to carry out its tasks, the ECB and the national central banks may: operate in the financial markets by buying and selling outright (spot and forward) or under repurchase agreement and by lending or borrowing claims and marketable instruments, whether in Community or in non Community currencies, as well as precious metals; conduct credit operations with credit institutions and other market participants with lending being based on adequate collateral. The ECB shall establish general principles for open market and credit operations carried out by itself or the national central banks, including for the announcement of conditions under which they stand ready to enter into such transactions' (from Protocol, No. 3, on the *Stature of the European System of Central Banks and of the European Central Bank*).

A lender of last resort function requires that base money is essentially provided on request to the banking system by the Central Bank, and in particular would be supplied if reserves were low following an expansion of broader money. More generally, the lender of last resort function recognises the role of a central bank in securing a stable financial system, but that specific objective of the stability of the financial system is not included in the remit of the ECB. It is clear that on occasions, the lender of last resort function may require base money to be supplied when pursuit of a price stability target would point in the opposite direction.

Third, the ECB is intended to be independent of the EU Council and Parliament and of its member governments. Thus there is a complete separation between the monetary authorities, in the form of the ESCB, and the fiscal authorities, in the shape of the national governments comprising the EMU. National governments are given the objective of keeping any budget deficit below 3 percent according to the *Stability and Growth Pact* (see below for more details). It follows that there can be little co-ordination of monetary and fiscal policy. Apart from the separation of the monetary and fiscal authorities, there is also the requirement cited below that national governments (and hence the fiscal authorities) should not exert any influence on the ECB (and hence the monetary authorities). Any strict interpretation of that edict would rule out any attempt at co-ordination of monetary and fiscal policies.

Fourth, a key relationship between the EU and national governments relates to the restrictions placed on national economic autonomy in that interest rates are set at the EU level and fiscal policy is constrained by the 3 percent of GDP upper limit on fiscal deficits. This is the *Stability and Growth Pact* , which details `escape' clauses that allow a member state that has an excessive deficit to avoid sanction. If there is an economic downturn and output has fallen by more than 2 percent, then the member state will escape sanction automatically but the deficit should be corrected once the recession has finished. If output falls between 0.75 and 2 percent then the Council can use discretion when making a decision on an excessive deficit, other factors will be taken into account such as the abruptness of the downturn, the accumulated loss of output relative to past trends and whether the government deficit exceeds government investment expenditure. The notion that 'excessive' deficit is one which is more than 3 percent of GDP will mean that a government seeking to ensure that its budget deficit does not go above 3 percent of GDP during recession will have to aim for an average deficit which is much lower.

In light of the swings of budget deficit over the course of a business cycle, we would reckon that the average level of the budget deficit would have to be of the order of 0 to 1 percent of GDP, given the swings in the size of the deficit over the business cycle. It would also mean that for many countries the primary budget position (that is excluding interest payments) would be one of a surplus. The ability of national governments to run deficits will be circumscribed by that Pact. A country which fails to keep its budget deficit within the 3 percent limit will have to pay in the first instance a penalty equivalent to the payment of a non-interest bearing deposit. If the situation persists the penalty becomes a fine equivalent to between 0.2 and 0.5 percent of GDP, depending on the size of the `excess' deficit. The penalty clause would add to the deficit it is meant to cure, and as such it could generate national opposition. This constraint on the budget deficit effectively precludes the use of national fiscal policy for demand management purposes. The budget position can clearly fluctuate over the business cycle in a stabilising manner, but there would be difficulties in dealing with severe recessions, noting that, for example, the deficit in the UK rose to near 8 percent of GDP in the early 1990s.[(4)]

The budget of the EU itself is relatively small. It represents around 1.5 percent of EU GDP, and there is a requirement that it is in balance, with revenue from member governments determined so as to cover planned expenditure. The EU is, thus, constrained to run a balanced budget on an annual basis. Articles 199 and 201 of the amended Treaty of Rome European Union 1998) require that 'the revenue and expenditure shown in the [Community] budget shall be in balance' and that 'the budget shall be financed wholly from own resources'. It follows that in no sense can the EU be seen to constitute 'big government' and act to stabilise the level of economic activity. Consequently, the scale and balanced budget nature of EU expenditure clearly means that there is no role for fiscal policy at the EU level (even of a passive form whereby budget deficits vary with the business cycle).

In order to meet the upper limit of 3 percent of GDP on national budget deficits during a recession, it is likely that member governments would need to run significant surpluses during economic upswings, and over the course of the business cycle the average budget deficit will be small or perhaps zero. The 3 percent of GDP rule for budget deficits may well mean that over the business cycle the budget position is balanced or in surplus. This means that 'National governments will need to aim at a balanced budget or surplus, or the deficit limit of 3 percent could well prevent the proper working of fiscal stabilisers over the economic cycle'. It also means that 'governments could be required to raise taxes, or cut government spending, as the economy moves into recession, thereby exacerbating the downturn' (Currie 1997, p. 13). In the past decade, the budget position in the UK has swung from a surplus of 1 percent of GDP to a deficit of nearly 8 percent. If a comparable swing in the budget position occurred in the future, with the largest deficit constrained to 3 percent, then the surplus would be 6 percent, with an overall surplus averaging around 1 percent of GDP. A more cautious government which aimed for say, a maximum deficit of 2 percent to provide a margin of error would clearly run a somewhat larger surplus.

A government budget deficit can be financed by borrowing or by issuing base money (M0), and the expansion of the economy involves some expansion of the stock of money. Credit has to be available to permit the expansion of expenditure to be financed, and an expansion of national income will usually generate a greater transactions demand for money. The expansion of the form of money (say M1) which is largely used to finance transactions is of particular significance. It is necessary for government to run a budget deficit which was partially monetised in order that base money (M0) increased. A growing economy required an expansion of the stock of money (say M1), and such an expansion requires the underpinning of a growth in M0 to prevent a continuous decline in the reserve ratio (between M0 and M1 in this instance). In the context of EMU, there is a complete separation between the fiscal authorities and the monetary authorities, and moreover the appropriate fiscal authorities are barred from running any deficit.

As the EU budget must be balanced each year, there can be no (base) money creation from that direction. It may well be that over the cycle there would be no net budget deficit (for the reasons indicated above). But in any case deficits run by member states must be covered by borrowing for they cannot be monetised since that would require credit to be granted to the national government by the ECB. This is clearly prohibited: 'Overdraft facilities or any other type of credit facility with the ECB or with the central banks of the Member States (hereinafter referred to as `national central banks') in favour of Community institutions or bodies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the ECB or national central banks of debt instruments' (Article 104 of the Treaty of Rome).

There would seem to be three possible responses by the ECB to this apparent inability of the ECB to create high powered euros. The first is that in effect the ECB does actually monetise national government debt through open market operations. The quote from article 104 of the Treaty of Rome given above rules out the direct monetisation of national government deficits (the prohibition of 'purchase directly') but to leave open the possibility of indirect purchases, that is through open market operations. Bonds would be sold by national governments, and then at some

later stage sold on to the ECB (or to one of the national central banks). The ECB could justify this on the grounds that their stated objective is price stability, which is compatible with growth of the stock of money in line with the growth of national income.(5) Under this scenario, the ECB would gradually accumulate the bonds of national governments: the interest on the bonds being paid by the national governments to the ECB, which then makes a profit, which is paid to its 'shareholders', the national governments (cf. Article 32 of the Protocol).

The second is that the ECB permits the ratios of broader money (e.g. M1, M3) to base money (M0) to grow over time. This would mean that the ECB foregoes the imposition of any reserve ratio requirement which would run counter to their announced reserve ratio for M3. The growth of these broader measures of money would be driven by the demands for those moneys, and in particular the growth of M1 would be driven by transaction requirements. This could only continue if the banks were willing to collectively become less liquid over time in the sense that the ultimate source of liquidity is base money, and the ratio of base money to broader measures of money would decline.

The third is that the ECB imposes reserve ratio requirements on banking and other financial institutions as it is permitted to do under article 19 of the Protocol, which prevents the reserve ratios from falling. The ECB has announced a reserve ratio on M3 of 2 percent. The clear consequence of this would be that the necessary monetary expansion to underpin economic growth could not occur (unless M1 grew even though the broader notion of M3 did not). Even if real growth did occur, it would have to be accompanied by price deflation. This is not to accept any simple quantity theory formulation, but rather to accept that expansion of the economy requires credit creation. Further, the ability of the European financial system to grant credit to finance investment and expansion would be severely limited. A post Keynesian approach would stress the role of credit creation in investment, and without the credit creation investment would be blocked off, and thereby any hope of economic growth.

Chick and Dow (1995) have indicated that there are large differences in the ratio of reserves to deposits between banks in different countries. Within the EU countries, Greece appears as an outlier with a reserve ratio of over 40 percent, but other countries have reserve ratios ranging from less than 1 percent percent (UK), and Italy and France at less than 2 percent to over 7 percent (Portugal and Denmark).(6) The current reserve ratios would not generally be constrained by the requirements of national central banks, but rather reflect the commercial banks calculations on risk and attitudes to liquidity. However, it is likely that the reserve ratios will fall in many countries since the holding of reserves imposes costs on the banks. The pressure of competition of banks from other countries could well put downward pressure on the reserve ratios. It can be readily calculated that relative small movements in the reserve ratio would have substantial impacts on the money stock (for given reserves) : for example, a move from 30 percent reserve ratio to 20 percent involves a 50 percent increase. This would suggest the potential for rapid increases in the stock of money, but any increase in the stock of money requires a demand for loans to provide a mechanism by which the money stock expands and an increased demand for money.

The conclusion which we would draw from this quick sketch of the policy framework of the euro is that there are likely to be significant deflationary pressures. These arise from the constraints on national fiscal policy, the absence of any significant EU fiscal policy and the tendency of the ECB towards deflation. However, there may be some tendency for commercial banks to expand loans and the stock of money (as reserve ratios fall) but there appears to be an absence of any mechanism by which base money can expand. The liquidity position of banks can then be expected to deteriorate.

THE PROBLEMATIC NATURE OF THE INSTITUTIONAL POLICY FRAMEWORK

Asymmetric Shocks

An important problematic aspect of the policy framework is the symmetry or otherwise of shocks. Given the one-instrument only nature of monetary policy within the eurozone, the extent of asymmetrical shocks becomes paramount. If shocks are indeed asymmetrical the one-policy framework cannot tackle effectively even the one-target objective of price stability. From the perspective of the business cycle, it could be argued that Ireland with output above trend to the extent of over 3 percent of GDP and Italy with output below trend to the extent of nearly 4 percent of GDP require quite different macroeconomic policies.(7)

The optimists would tend to believe that the introduction of the euro and the continuing effects of the single market, would lead to further integration between the national economies. This integration could then be reflected in some convergence between national business cycles and to a reduction in the extent of asymmetric shocks (that is shocks which impact on some economies but not on others). If there was full integration between the national economies then a unified economic policy would be appropriate though we would argue that a single policy instrument such as interest rates is not sufficient to achieve multiple objectives. It is too soon to be able to assess whether the single market has indeed generated more integration in the sense in which we have indicated. One simple measure is the variation between countries in terms of the business cycle, and for this we can look at, for example, the standard deviation of the output gap across countries. On OECD figures, this was 1.69 percent in 1998 as against an average of 1.77 percent over the period 1982 to 1998.(8) This does not suggest (albeit on a very simple measure) much convergence of the business cycles across the EU countries.

The results generated by Fatas (1998) which relate to the period 1960 to 1996 suggest that there are significant asymmetric shocks which have lasting effects on GDP of individual countries relative to the EU average. The results imply that relative GDP is far from being a stationary variable, and fluctuations in GDP growth are lasting with permanent shocks being large and frequent.

Funke, Hall and Ruhwedel (1999) report a decline in the importance of country-specific shocks over the past 20 years, although they were only looking at manufacturing industries. However, they conclude that "not all countries are equally far along this path [of convergence] and so the implication is that, if European governments are prepared to trade the costs of surrendering the exchange rate as a policy instrument for the benefits of a common currency, monetary union should only include a small core group of countries that have reached the symmetric league (Germany and the Netherlands and possibly France and Austria; certainly not Greece or Portugal, and the UK is probably not fully ready yet)" (pp. 63-64).

The degree to which countries (and regions) suffer from asymmetric shocks and are at different points of the economic cycle raises significant questions for economic policy. The present arrangements are deficient in at least two respects. First, as already suggested, the single policy instrument of interest rate cannot be set in a manner appropriate for different regions suffering from different shocks and/or at different points of the economic cycle. A particular concern here would be that the interest rate may be set more with regard to those regions which are viewed as `overheating' rather than to those regions which are `freezing'. Second, the constraints on national and EU level fiscal policy, outlined

above, clearly operate against the active use of fiscal policy and even place constraints on passive fiscal policy (which would involve allowing budget deficits to vary counter cyclically).

An important piece of evidence relating to asymmetric shocks is Arrowsmith et al (1999). This study concentrates on the volatility of euro and its possible assymetric effects. The sole objective of price stability suggests that monetary policy will have serious implications to the euro exchange rate stability. The non-availability of national exchange-rate adjustment for shocks which have differential effects on the eurozone economies, will have serious implications. The euro interest rate will have to cope with these shocks, implying uncomfortable consequences for the exchange rate. This exchange rate volatility will have uneven impacts on the eurozone economies. The study by Arrowsmith et al (op. cit) simulates the impact of exogenous exchange rate disturbances on individual economies under the assumption of the ECB pursuing the single objective of price stability. Their results confirm these propositions unambiguously.[(9)]

Channels of Monetary Policy

Monetary policy is often discussed in essential monetarist terms, namely that the stock of money can be changed (or targeted) by the Central Bank, and the growth of the stock of money determines the rate of inflation, leaving output and employment determined on the supply-side of the economy (invoking the classical dichotomy between the real and monetary sides of the economy). But whatever is the rhetoric, the reality is that the relevant stock(s) of money are bank deposits (whether narrowly defined as demand deposits or broadly defined to include time deposits) which are created by banks but remain in existence only when there is a demand to hold them. Further, and of particular significance here is that monetary policy operates through interest rates. A change in the 'repo' rate works through the effect on the spectrum of interest rates and thereby on demand and supply of loans and the willingness of the public to hold money. From these rather obvious observations, three considerations arise.

First, the basis of the classical dichotomy is undermined. In particular, it would be anticipated that variations in the rate of interest would have an impact on the level of investment (and thereby future productive capacity) and the exchange rate. Monetary policy in the form of interest rates is viewed as operating through the effect of the level of economic activity and thereby on the rate of inflation. In so far as interest rate changes are effective in influencing the pace of economic activity, they can be seen to do so through exchange rates (and thereby on demand for import and exports) and through investment.

Second, there are a range of reasons for thinking that monetary policy will have a differential impact across regions and countries. As the Monetary Policy Committee (1999) recognises, monetary policy "sets one interest rate for the economy as a whole and can only take account of the impact of official rate changes on the aggregate of individuals in the economy" (p. 7). Monetary policy is undifferentiated in that a single official rate will apply. But there are differences in financial structures between countries in the eurozone, and in particular differences in the extent of variable rate and fixed rate borrowing and in the effect of interest rate changes on economic activity. The effects of interest rate changes will be far from uniform across eurozone countries. An interest rate rise may succeed in slowing down economic activity in some countries but not in others; it may have little effect on inflation in some but act to speed it up in others.

Third, there is the question of how effective the interest rate as an (or the) instrument of demand management policy. To begin with, the ECB will have no choice but to raise interest rates when the prospect is of inflation rising. The ECB may operate on evidence of prices rising faster or any evidence such as unemployment falling below the estimated non-accelerating inflation rate of unemployment (the NAIRU) or some combination of factors. Interest rates are likely to be a rather blunt instrument for this purpose. There are questions over how much impact a rise in interest rates will have on the rate of change of the money supply, and further whether changes in the money supply have a causal effect on changes in prices. It is also the case that increases in interest rates raise prices, whether directly through impact on mortgage payments (particularly significant in the UK) or indirectly through impact on firm's costs. Furthermore, whether interest rates have the direct effect postulated depends on the way which the consumer price index is constructed. But it is also of relevance how people regard interest rate rises. If they are perceived as having caused prices to rise, whether or not recorded in the official statistics, there may be some impact on other prices and on wages.

A number of problems are expected to surface in view of the architecture of the EU banking systems and financial markets. The banking systems are at different stages of development with different characteristics where the capacity of banks to create credit depends on their stage of evolution (Chick and Dow 1995). Banking systems in the peripheral countries (Greece, Portugal, Spain, Ireland) differ substantially from the ones in the core countries in this respect. There are also important differences within the core countries, which are particularly pertinent. For example, the distinction between bank-based (for example Germany) and capital-market-based (UK is a good example) financial systems is pertinent in this context. These institutional and behavioural characteristics across EMU countries, along with differences in the timing and amplitude of cycles, are expected to have serious implications for the transmission mechanism and thus channels of monetary policy, throughout the EMU area. They are significantly different across the member states. The ECB monetary policy is thus expected to have asymmetric effects across the Union. So that "differences in the responsiveness of other financial markets to changes in money market interest rates and differences in the net financial positions and interest sensitivities of personal, corporate or financial sectors will mean that the burden of adjustment will not be evenly distributed" (Arrowsmith 1995, p. 84).

The available empirical evidence on the transmission mechanism is on balance supportive of the view that monetary policy will have different effects across the EMU countries. Empirical studies which are based on large multi-equation econometric models suggest significant differences, while studies based on small VAR-type models suggest insignificant differences. Table 1 provides a summary of the findings of an empirical assessment of the impact of monetary policy on output in various eurozone countries (including the UK for comparative purposes). They clearly support the suggestion just alluded to. Dornbusch et al. (1998) when reviewing the evidence conclude that in view of the usual difficulties associated with the interpretation and origins of reduced-form relationships, the evidence adduced from large-scale models is more reliable. Further support of the argument of asymmetric effects of monetary policy, is the possibility that consumers display different responses to interest rate changes across the EU. For example, consumers in the UK may be more sensitive to interest rate changes than in some other countries in the EU, due in part to the system of mortgage finance. Additional institutional differences, such as the system of equity markets, may also account for differences in behaviour. Evidence based on simulations with macroeconomic models run by national central banks, confirm the differential impact of interest rate changes across the EU. The following example is an interesting and relevant result that makes the point about the differential impact of interest rate changes on economic activity. It suggests that "for the UK, the impact of an interest rate change on domestic demand after two years is four times the EU average", so that "the impact of any change in European monetary policy would be disproportionately channelled through the UK" (Center for Economic Policy 1997, p. 17).

The channels of monetary policy are likely to change. Especially so in view of the pressures the financial sector is likely to come under,

crucially in terms of credit allocation. Table 2 makes the point vividly. Private sector balance sheets in five euro-area countries show that whilst the net assets of both households and enterprises as a percentage of GDP are fairly similar across countries, the composition of gross assets and liabilities varies significantly. In addition, the response of lending rates to changes in policy interest rates also vary. Increasing competition amongst financial institutions will thus give a significantly wider choice of financial instruments. Financial institutions themselves will inevitably react to these developments. As a result, more emphasis is likely to be on interest rates and less on credit availability (OECD 1998, p. 143).

The implementation of monetary policy involves the major difficulty that the interest rate is unlikely to be appropriate for all areas of a monetary union, and this difficulty is exacerbated in the case of the eurozone with the known differences in banking system and the responsiveness of the economies to interest rate changes. In the context of a relatively closed economy such as the eurozone, interest rates may influence the exchange rate but that change would have relatively little influence on aggregate demand. But interest rates may well operate on investment, and the use of interest rates as a counter-inflation policy may well harm investment and hence future productive capacity.

Income and Interest Rate Elasticity of Demand for Money

A further problematic aspect of the institutional policy framework relates to the possibility of differential income and interest rate elasticities of the eurozone demand for money. Under this possibility, significant differences in income levels and variation of the rate of interest by the ECB will have differential effects throughout the zone. If the income elasticity of demand for money is different, then the national requirements of money stock expansion would be different even if income growth converges. If the interest rate elasticity is different, then monetary policy would not be uniformly effective throughout the eurozone. Under the assumption of exogenous money supply, low interest rate elasticity makes monetary policy very effective; high interest rate elasticity, by contrast, would imply an ineffective monetary policy. In addition, using interest rate changes to target the stock of money would have differential effects. The percentage change in the ECB interest rate would be associated with different percentage changes in euro demand for money. A further implication of possible marked differences in income and interest rate elasticities follows within the traditional theoretical perspective (which appears to be the theoretical framework the ECB has based its policy on). This approach suggests that differences between the rate of growth of the stock of money and of the demand for money would generate inflation. Hence differences in the growth of the demand for money, and a single rate of interest as the monetary policy instrument, would potentially generate differential inflation outcomes.

A number of studies have attempted to estimate the magnitude of interest rate elasticity and Table 3 provides a summary of a number of studies which have attempted to estimate it econometrically. We report the results of a number of studies in addition to our own estimates. We have utilised the M3 definition of money stock throughout, since this is the one targeted by the ECB. Four interest rate variables have been employed: short- and long-term, `own' rate and `spread' between the own rate and an opportunity cost rate. We have utilised the recently developed technique of cointegration with the usual tests of integration - with all the variables utilised being I(1). In Table 3, our results appear under the row labelled 'This paper'. It is clear from this table that there are substantial differences in the estimated elasticities. Furthermore, and as can be ascertained from the last column of Table 3, there are also substantial differences in the ECM coefficients from country to country within the eurozone, implying that adjustments when off the steady-state vary significantly. It would be very pertinent under this analysis to ask the question of whether further differences in the elasticities may materialise in view of the changes suggested above. The answer to these questions will have to wait until more data become available. One, however, could speculate on the issue and suggest that in view of the expected changing emphasis on interest rates and the differential mark-up on lending rates across the eurozone countries (as a result of risk differentials etc.), the variation in interest rate elasticity of the demand for money should be expected to increase than narrow.

A further potential problem relating to the M3 demand for money, is its instability. Even a cursory look at Table 3 clearly indicates how unstable this relationship is within each country where more than one study is reported. A study with a different focus but closely related to what has just been argued, is that of Holmes (1999). It is shown that developments in exchange rate policy and capital controls have been important for those eurozone countries included in the sample of the study (Belgium, France, Germany, Italy, Netherlands, Portugal and Spain).These developments affected relative interest rates and income movements in money velocities. Using monthly data for the period April 1972-December 1979, this study suggests that whilst velocities were integrated during the 1970s and the period 1983-1992 (the middle of the ERM period), they were not integrated over the period 1992-1997.

It is also important to ask whether the possibility of a eurozone-wide stable demand still exists. We may attempt to derive conclusions from studies which concentrate on estimates of EU demand-for-money functions, and which use constructed aggregates. Arnold (1994) summarises these studies to conclude that "a stable European money demand function exists. In fact, it appears to be more stable than the money demand functions of individual countries" (p. 249). The same study, though, shows that these estimates from constructed aggregate data are overoptimistic in that "the use of aggregated data presumes that all noise in national demand functions will be reduced in the process of aggregation and will not be `passed on' the aggregate level" (p. 250). The three sources usually quoted as the causes of money-demand instability are particularly relevant in this context. Institutional changes (for example, new substitutes for money, changes in banking regulation), international developments (for example, abolishing capital controls, changes in the exchange rate regime), and monetary policy (changes in view of the Lucas critique and Goodhart's `law'), are all possible. We have argued in this paper that the first two sources are expected to materialise in the eurozone; as for the third, whilst we have not analysed it in this paper, its potential in causing instabilities to the eurozone demand for money is evident.

There is another problem at present in that we have to invoke exogenous money, in view of the fact that the ECB assume an exogenously driven money stock. We may consider the possibility and implications when the stock of money is viewed as demand driven (Arestis 1997). The estimates of the demand for money suggest that there are substantial differences between countries in respect of the demand for money. The interest rate will in effect be the same in the sense that there is a common `repo' rate, though the rates of interest offered and charged by banks may vary across countries depending on market power and liquidity preference. Inflation rates are likely to be similar, but there may be some differences in the growth of income. The likelihood is that the growth of demand for euros will vary across countries, and hence the growth of the stock of euros (bank deposits) in each country will vary. Since loans are the other side of the banks balance sheets (to bank deposits), the availability of loans would vary across countries. This availability, though, may not be what national economies require in view of substantial differences in banking structures across the eurozone. In the absence of any intervention to enable the weaker countries to satisfy their demand for loans, an unsatisfied excess demand for loans would be inevitable. This would depress especially those regions that need funding most.

Financial Capital Mobility

The increase in the degree of financial capital mobility within the EMU reveals additional difficulties. Financial institutions within the

eurozone area hold about 90 percent of their portfolios in domestic assets. With the removal of foreign exchange risks and regulations which inhibit holdings of foreign assets, as well as the elimination of currency conversion costs, financial institutions will increase their holdings of euro assets substantially. The clear implication is that the amount of funds moving within the euro area will make a quantum leap. The regulatory and institutional environment will remain national at least during its initial phase when institutions have not adapted to the new environment. Rates of return will differ across EMU members, but banks will be able to borrow at the same interest rate. Under these circumstances financial disturbances are likely to materialise. A stronger boom in, say, Third Italy than in the rest of the EMU, will be associated with asset inflation there, with the ECB being unable to initiate policies specific to the needs of Third Italy. We can envisage that there will be substantial money flows into areas where asset prices are rising and which offer the prospects of high returns. The inflow will generate further rises in asset prices, generating further asset inflation. The boom cannot continue forever, and at some stage the bubble will burst, with asset prices collapsing causing financial distress in the local banking system. Recent experience in the Far East is probably indicative of what may happen.

There may be difficulties emanating from increased volatility of the euro, especially if it were to become reserve currency challenging the dollar. To begin with, investors and borrowers that were not interested previously in European currencies because of the limited size of the money markets, are expected to increase substantially their demand for euros. At the same time, though, the holdings of different European currencies to diversify their risk, will be reduced thus containing the increased demand for euros just referred to. In fact, there is the potential of `dollar overhang', the possibility of excess supply of foreign exchange reserves within the ESCB, in view of the replacement of the eurozone countries' reserves by the euro. Estimates range from a large excess supply to a possible excess in demand (see Arrowsmith et al. 1999, for more details). A further potential shift into euro is changes in the currency composition of other countries official reserves and of international investors' portfolios. Arrowsmith et al (op. cit.) estimate that "If the attraction of the euro as a reserve currency to official holders outside EMU were sufficient to restore its share of world reserves to that taken at present by the currencies of the 11 participating members of EMU, their euro holdings would rise by $66 bn; for the euro, over time, to achieve a share equal to that of the US dollar in non-EU countries' reserves would require (assuming the currencies' shares are unchanged) a switch from the dollar to the euro of $260 bn) (in 1996 terms); and, similarly, equality with the dollar in total world reserves would entail a switch to the euro of $360 bn" (p. 9). As for international investors' portfolios, "a switch of $250 bn into euro deposits would be required" (Arrowsmith et al., op. cit., p 10) to retain the share of euro in total world foreign currency deposits (at the pre-EMU percentage of non-banks' holdings of the EMU-11 currencies as foreign currency deposits. Furthermore, "to achieve an equal share with the dollar would entail a switch of $180 bn (to give a 27 percent share in total foreign currency deposits after EMU)" (Arrowsmith et al., op. cit., p. 10). Portfolio shifts should also be expected in the international debt market. Arrowsmith et al. (1999) argue that "a movement of $410 bn would restore the euro's share in the international debt market to that presently held by the EMU-11 currencies, while reaching parity with the dollar would require a shift of $320 bn" (p. 11). Similar arguments could be advanced in the case of international borrowers, thus further adding to the uncertainties just alluded to.

Furthermore, and as agreed at the Madrid summit in December 1995, all new government debt issued after 1 January 1999 by EMU members will be denominated in euros. In addition, all the eurozone countries have committed themselves to renominate existing debt into euros from national currencies. It follows that the re-denomination of government and corporate bonds in euro, and the adoption of a uniform set of conventions in the securities markets, provide further support to the argument that significant changes in the eurozone financial markets will take place. More importantly, these developments will result in a market with euro-denominated securities the size of which is expected to be substantial (OECD 1998, p. 146). An interesting implication of these developments may very well be that the growth of stronger capital markets would transform bank finance which is the traditional form of company finance, towards market finance (that is bonds and stocks). The value of listed companies in, for example, Germany as a percentage of GDP is currently only 40 percent, when in the UK and the USA is 150 percent. Elsewhere in the EMU area the percentage is around Germany's. Consequently, the capitalisation in the EMU stock exchanges could easily double or treble in the near future as existing markets expand and new open. Still a further implication of these developments is that the channels of influence of monetary policy will inevitably change throughout the EMU member countries.

SUMMARY AND CONCLUSIONS

The broad conclusions which we draw from the above discussion are twofold. First, the euro starts with many of the EU countries and regions experience high levels of unemployment. The policy framework which accompanies the introduction of the euro (the Stability and Growth Pact and the ECB) is a generally deflationary one, and does not involve any significant attempts to reduce either the level of or the disparities in unemployment. The prospects for unemployment appear bleak, and in that sense the description of a continuing unemployment crisis could be applied.

Second, capitalist economies suffer from financial fragility and periodic financial crisis. The eurozone may become rather more prone to such crises than has been the case in the constituent countries. The split of responsibilities between the ECB and the national central banks and the weak provisions for the ECB to act as lender of last resort are likely to exacerbate financial fragility. This would be reinforced by the far-reaching changes that are expected to take place in the financial and capital markets which would enhance capital mobility in the eurozone. We also suggest that asymmetric shocks, different channels of influence of monetary policy, and differences in its impact, are forces working towards increasing further financial fragility.

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NOTES

1. The use of monetary policy to target the rate of inflation draws on two broad sets of assumptions. The first is that monetary conditions are the cause and inflation the effect, and that interest rates can affect monetary conditions. In the simple monetarist story, the money supply determines the rate of inflation. But if there is reverse causality, whereby inflation influences monetary conditions, then seeking to set the latter becomes much less attractive. The second broad assumption is the classical dichotomy under which there is a separation between the real and the monetary sides of the economy, and under which the monetary conditions do not influence the real side of the economy, either in the short-run or the long-run. The NAIRU is a reflection of this notion, as it represents a supply-side equilibrium rate of unemployment, at which inflation is constant. In its usual representation, the NAIRU is settled by labour market factors, and not influenced by capacity or by aggregate demand.

2. The Governing Council comprises the Executive Board and the governors of the national central banks. The Executive Board of the ECB consists of the President, Vice President and four other members who "shall be appointed from among persons of recognised standing and professional expertise in monetary and banking matters" (Article 11 of Protocol on the Statute of the European System of Central Banks and of the European Central Bank). The ESCB "shall be governed by the decision making bodies of the ESCB" (Article 8). It is clear that financial and banking interests will be well represented but there will be no representation of national or regional governments, trade unions, industrial and business interests. This heavy reliance on banking and financial interests is likely to generate an emphasis on `sound' money and the pursuit of overly deflationary policies. Little regard will be paid to issues of unemployment or growth.

3. Eligible liabilities are: overnight deposits; deposits with agreed maturity up to 2 years; deposits redeemable at notice up to 2 years; debt securities issued with agreed maturity up to 2 years; and money market paper.

4. For more details on the *Stability and Growth Pact* see Arestis and Sawyer (1999), and, especially, Arestis, Sawyer and McCauley (1999).

5. This should not be read as supporting a monetarist view on inflation, though the ECB and others appear to adhere to an essentially monetarist view of inflation and hence could use an argument akin to growth of money supply equal to growth of national income.

6. Figures calculated from *International Financial Statistics* , and generally refer to March 1999 and to the clearing banks, and refer to ratio of broad money to reserves.

7. Figures refer to output gap and are taken from OECD *Economic Outlook* , June 1999.

8. The average figure is much influenced by the experience of Finland in the early 1990s, when the economy slumped under the impact of the collapse of the Soviet Union. The figures excluding Finland are 1.62 percent in 1998 and an average of 1.60.

9. The simulations reported in Arrowsmith et al. (1999) are undertaken on the large multi-country model developed and operated by the National Institute of Economic and Social Research, the so-called NIGEM model (see NIESR 1998).

Table 1 Empirical Assessments of the Impact of Monetary Policy on Output in Various European Countries
(Impact on real GDP, percentage deviation from baseline in second year after shock)

		Country					
Study	**Type of shock**	**Germany**	**France**	**Italy**	**United Kingdom**	**Spain**	**Netherlands**
Single country Macro Models[a] National Central Bank models (BIS, 1995)	1	-0.4	-0.4	-0.4	-0.9	0.0[a]	-0.2
Multi-country Macro Models[b] Fed MCM model (BIS, 1995)	1	-0.7	-0.7	-0.3	-1.2	---	---
IMF Multimod standard multiplier	2	-0.5	---	---	-0.5	---	---
Quest II (Commission Services)	2	-0.4	-0.4	-0.3	-0.4	-0.4	-0.3
Taylor (1995)	2	-0.4	-0.4	-0.4	-0.1	---	---
Small structural models							
Britton and Whitley (1997)[c]	1	-0.5	-0.5	---	-0.3	---	---
Britton and Whitley (1997)[d]	1	-0.4	-0.4	---	-0.4	---	---
Reduced from equation							
Dornbusch, Favero and Giavazzi (1998)[e]	3	-0.5	-0.5	-1.1	-0.5	-0.4	---
Dornbusch, Favero and Giavazzi (1998)[f]	3	-1.4	-1.5	-2.1	-0.9	-1.5	---
Structural VARs							
Ehrman (1998)	4	-0.6	-0.4	-0.1	-0.2	-0.1	0.0
Ramaswamy and Sloek (1997)[g]	4	-0.6	-0.4	-0.5	-0.5	-0.3	-0.6
Barran, Coudert and Mojon (1996)[h]	4	-0.6	-0.4	-0.3	-0.4	-0.4	-0.3
Gerlach and Smets (1995)[i]	4	-0.3	-0.2	-0.2	-0.6	---	---
Gerlach and Smets (1995)[j]	1	-1.0	-0.5	-0.5	-0.7	---	---

a) Fixed ERM rates for Germany, France and Italy; endogenous exchange rate for United Kingdom.
b) Endogenous exchange rates.
c) Each country estimated separately.
d) All countries estimated jointly.
e) Effect after 8-12 months. Response variable is monthly output data.
f) Effect after 2 years. Response variable is monthly output data.
g) Baseline model.
h) Baseline model (model 1).
i) 1 standard deviation shock.
j) 1 per cent interest rate hike for 2 years.
Types of monetary shock: Type 1: 1 per cent joint rise in short-term interest rates sustained for at least two years: Type 2: 1 per cent permanent decrease in money target; Type 3: 1 per cent simultaneous permanent increase in short-term interest rates; Type 4: 1 standard deviation interest rate shock which in many cases is close to one percentage point.
Sources : Kieler, M. and T. Saarenheimo (1998) and Ehrman (1998); OECD (1998) where all the relevant references can also be found.

Table 2 Financial Position of the Private Sector in Selected Euro Area Countries (1996, as per cent of GDP)

	Germany[f]	France	Italy	Spain[g]	Belgium
Non-financial enterprises Net assets	-35	-73	-67	-43	-81
Gross assets	70	249	39	80	135
of which:					
Short-term[a]	21	24	9	39	26
Long-term[b]	9	4	4	19	38
Equity	23	176	20	16	71
Gross liabilities[c]	105	322	106	123	216
of which:					
Short-term loans	21	16	25	n.a.	21
Long-term loans	45	42	17	n.a.	63
Households					
Net assets	124	138	163	78	217
Gross assets *of which:*					
Short-term[a]	59	21	44	73	75
Long-term[e]	54	41	60	7	79
Equity	17	71	36	40	102
Gross liabilities *of which:*					
Short-term loans	2	8	7	n.a.	4
Long-term loans	8	32	12	n.a.	36

a) Cash, deposits and short-term loans and securities.
b) Bonds and long-term loans.
c) Including own shares.
d) Including, in some cases, corporate bonds.
e) Bonds and net equity of life insurance reserves and pension funds.
f) Figures relate to 1995.
g) Data for long vs. short loans not available. It is assumed that half of total loans on the asset side are short and the other half long.
Source: Financial Acounts of OECD Countries; OECD (1998).

Table 3 Interest and Income Elasticities for M3 Demand for Money

Author	Country	Sample period	Method of Estimation	Income elasticity	Short-term interest rate elasticity	Long-term interest rate elasticity	ECM coefficient
This paper (1999)	AT	1980-98	Johansen, OLS1[One-step OLS estimation]*	1	-0.9++ [10.11]++		-0.15
Hayo (1998)		1965-96	Johansen	1.34		-0.22	
This paper (1999)	BE	1980-94	Johansen, OLS1	4.86	-7.6		-0.11
Fase and Winder(1993)		1971-89	SECM [Single equation error correction model]	1	0.03	-0.03	
This paper (1999)	FI	1980-90	Johansen, OLS1*	1	-2.19		-0.22
This paper (1999)	FR	1979-90	Johansen, OLS1*	1	[4.56]++	-1.61++	-0.1
Fase and Winder (1993)		1971-89	SECM	1		-0.01	
Wesche (1997)		1973-93		4.09		0.09	
Henry and Sicsic (1994)		1971-91	Johansen, OLS1	1	-0.9		
This paper (1999)	DE	1979-98	Johansen, OLS1*	1	3.92 (spread)		-0.12
Fase and Winder (1993)		1971-89	SECM	1	0.01	-0.04	
Hansen and Kim (1995)		1960-92	SECM	1.26		-0.36	
Hansen and Kim (1995)		1974-89 1974-92 1974-89 1974-92	FMOLS [Fully Modified OLS] OLS	1.19 1.19 1.19 1.19	0.09 0.10 0.11 0.11	-0.32 -0.34 -0.34 -0.33	
Luekepohl et al. (1996)		1975-94	OLS1	1	[4.1]	-4.1	
Deutsche Bundesbank (1995)		1975-95 1975-95	OLS2 [Two-step OLS estimation]	1.2 1		-6 -3	
Biefang-Frisancho et al. (1995)		1963-90	Johansen	1.2		-2.3	
Beyer (1994)		1976-89	OLS1	1	3.7	-6.4	
Toedter (1994)		1975-92	OLS2	1.6		-1.6	
Kole and Meade (1994)		1970-94	OLS1	1.2		-3.6	

Author	Country	Sample period	Method of Estimation	Income elasticity	Short-term interest rate elasticity	Long-term interest rate elasticity	ECM coefficient
Gerdesneier (1996)		1975-93	Johansen, OLS1	0.8	0.5	-0.5	
Von Hagen (1993)		1965-89	OLS1	1.3		-4.5	
This paper (1999)	IE	1979-97	Johansen, OLS1	2.95		0.22++ (spread)	-0.14
Fase and Winder (1993)		1971-89	SECM	1	0.01	-0.01	
Hurley and Guiomard (1989)		1979-88 (monthly)	OLS	0.27		-0.01	
This paper (1999)	IT	1979-98	Johansen, OLS1	1	-2.12		-0.21
Wesche (1997)		1973-93		0.93		0.021	
Fase and Winder (1993)		1971-89	SECM	1		-0.01	
Fase and Winder (1993)		1971-89	SECM	1	0.05	-0.06	
Fase and Winder (1994)		1971-89	OLS1	1	2.2	-3.4	
This paper (1999)	PT	1980-96	Johansen, OLS1	1		-1.46 1.35 (spread)	-0.41
Fase and Winder (1993)		1971-89	SECM	1	0.01	-0.01	
This paper (1999)	ES	1980-98	Johansen, OLS1*	1	-3.35++		
Fase and Winder (1993)		1971-89	SECM	1	0.02	-0.01	

Fase and Winder (1993)
Figures in brackets represent estimates of the own rate of interest.
++ Not significant at the 5 per cent significance level.
* In these cases, 2 cointegrating vectors were found. Consequently, the restrictions that were imposed identified the demand for money and income equations.